

REMARKS

Claims 1, 2 and 4-9 are pending in this application, and claims 7 and 8 are withdrawn from consideration. By this amendment, claim 1 is amended. Support for the amendment can be found, for example, in Fig. 1 and the corresponding description in the specification. No new matter is added. Applicants respectfully request reconsideration and prompt allowance of the pending claims, at least in light of the following remarks.

I. The Claims Define Patentable Subject Matter

The Office Action rejects claims 1, 2, 6 and 9 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2003/0020157 to Natori et al. (Natori) in view of U.S. Patent No. 6,393,210 to Wu; rejects claim 4 under 35 U.S.C. §103(a) over Natori, Wu and U.S. Patent No. 6,225,156 to Cuchiari et al. (Cuchiari); and rejects claim 5 under 35 U.S.C. §103(a) over Natori, Wu and U.S. Patent No. 5,846,293 to Rubey et al. (Rubey). The rejections are respectfully traversed.

In its rejection of claim 1, the Office Action asserts that Natori discloses a heating mechanism provided on a chamber because heating mechanism 96 of Natori allegedly rests on the bottom of chamber 90 of Natori (see Natori, Fig. 28). Applicants respectfully disagree with this assertion. In particular, heater 96 of Natori is located inside chamber 90, not on or under chamber 90 (see Natori, Fig. 28). Furthermore, Natori fails to even disclose the heater 96 is located on the bottom surface of chamber 90. According to Fig. 28 of Natori, the label for heater 96 points to a shaded rectangular object, thereby indicating that the shaded rectangular object is heater 96. However, there is an unlabeled, unshaded rectangular object between the bottom of chamber 90 and heater 96 (see Natori, Fig. 28). Natori fails to disclose that the unlabeled, unshaded rectangular object is part of chamber 90 or part of heater 96. Thus, Natori fails to disclose a heating mechanism provided on the chamber. However, in the interest of expediting prosecution, claim 1 is amended to recite that the heater mechanism is

positioned outside the chamber.

Natori and Wu, either alone or in combination, fail to disclose each and every feature recited in claim 1. Heater 96 of Natori is clearly inside chamber 90 (see Natori, Fig. 28). In addition, if heater 96 were located outside of chamber 90, the effectiveness of heater 96 would be reduced because the distance between heater 96 and substrate s10 would be increased, and heater 96 would have to heat the substrate s10 through the outer wall of chamber 90. Thus, even if heating mechanism 30 of Wu were considered to be outside of chamber 21 of Wu, it would not have been obvious to include the heater of Wu with the apparatus of Natori because it would have reduced the effectiveness of the heater.

In addition, Natori and Wu, either alone or in combination, fail to disclose that "the capacity of the chamber is 100 times or less of a volume of a substrate," as recited in claim 1. The Office Action agrees that Natori fails to specifically disclose that the capacity of the chamber is 100 times or less the volume of the substrate. However, the Office Action asserts that both Natori and Wu show reactor chambers that are "obviously" less than 100 times than the volume of the substrate. Applicants respectfully disagree with this assertion.

The Office Action agrees that these drawings are not necessarily to scale, but assert that the scales employed in the drawings would have reasonably indicated to one having ordinary skill in the art that reactors with volumes on the same order of magnitude as the volume of the wafer are typically employed. However, the drawings of Natori and Wu are schematic in nature and are intended to show special relationships instead of relative sizes. In addition, neither reference teaches the size of the chambers. Wu's disclosure that "conventional RTP reactors which generally process only one wafer at a time can be used" does not relate to the size of the chamber but rather to the quantity of wafers processed at one time. Furthermore, the drawings must be clear enough to adequately show the features of the disclosed invention. If the drawings of Natori and Wu were intended to show relative sizes,

they would be unable to show chambers that are greater than 100 times size of the substrate because it would be difficult to clearly show all the features. Therefore, because neither Natori nor Wu discusses the size of the chamber, the combination of Natori and Wu fails to render obvious a chamber being less than 100 times of the substrate.

Claims 2, 4-6 and 9 depend from independent claim 1. Therefore, because of their dependency on claim 1, these claims are also patentable at least for the reasons discussed above, as well as for the additional features these claims recite.

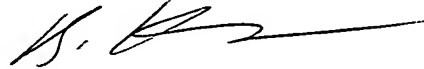
Accordingly, Applicants respectfully request withdrawal of the rejections.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Brian K. Kauffman
Registration No. 63,199

JAO:BKK/mab

Attachment:
Request for Continued Examination

Date: February 17, 2009

OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

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